



Tasmanian Field Naturalists' Club

EASTER CAMP-OUT

1913

TO SAFETY COVE, PORT ARTHUR

TASMANIA

GENERAL REPORT

By Clive E. Lord, Hon. Secretary.

BOTANICAL NOTES

By L. RODWAY, Government Botanist.

DREDGING OPERATIONS

By C. T. Harrisson, Member Mawson Antarctic Expedition.

GEOLOGICAL NOTES

By A. N. Lewis.

Reprinted from "The Tasmanian Mail."

LIST OF CAMP MEMBERS

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Approaching the Jetty at Port Arthur.



Landing from the S.S. Koomeela at Safety Cove.

مفهوم الحداثة في الفكر العربي الحديث

The annual Easter camp of the Tasmanian Field Naturalists' Club was held this year at Safety Cove, Port Arthur. The development of this annual institution is shown by the following list, showing the locality of and the number of members who have attended the various camps held since their inception in 1905:—

1905.—Bream Creek; camping party, 9.

1903.—Cole's Bay (Freyinet Peninsula);
camping party, 40.

1907.—South Bruni: camping party, 27.

1903.—Maria Island (Soldier's Point);
camping party, 27.

1909.—Wineglass Bay (Freycinet Peninsula), camping party, 84.

1910. Cole's Bay: camping party, 97.

1911.—Southport; camping party, 60.

1912. Maria Island (Darlington); camping party, 69.

1913.—Safety Cove, Port Arthur; camping party, 80.

This year new ground was broken by choosing Safety Cove, on Tasman's Peninsula, as the scene of the camp. Safety Cove is picturesquely situated on the western shore of Port Arthur, and about three miles from the old convict settlement. To the southward of the camp site is Brown Mountain, and it is in the basaltic cliffs that line the coast in the rear vicinity that the Blow Hole and the famous Remarkable Cave are situated. At the northern end of the cove the rocky shores of Point Puer jut out far into the sea. It was here that the boy convicts were condemned to spend many weary years. Sometimes over 800 convicts, whose ages did not exceed 18 years, were imprisoned on the point, but as this portion of the convict establishment was not used after 1857 there is very little to be seen of the spacious buildings which were once erected here. Just to the north-east of Point Puer lies the far-famed Dead Island, the final resting place of hundreds of weary exiles, as well as a few free

citizens of the colony. The main convict station was situated at less than a mile due east from Dead Island, on the shores of Opossum Bay, and is, historically speaking, one of the most interesting places in Tasmania. It was first picked out as a station in 1820 by Governor Arthur, who sent Dr. Russell with a body of convicts and militia to form the nucleus of the future establishment which grew to such large dimensions about ten years later under the rule of the famous Dr. J. O'Hara Booth, who at one time had over 7,000 convicts under his charge, on the Peninsula. The convicts were employed in building, farming, making roads, etc., as well as in the large workshops which were manned by convicts, and supplied the wants of the numerous inhabitants.

Thursday evening at midnight, found 80 members aboard the s.s. Koomeela, and a start made for Safety Cove, Port Arthur, which was reached about daylight, and an advance party was landed immediately, and met by Mr. R. M. Tanner, who had kindly given the club permission to camp on his estate during our stay. The camp was pegged out, and a start made to bring all the camp impedimenta ashore, which was accomplished after numerous trips in the smaller boats that had been taken down for the use of fishing parties, etc. The tents began to spring up like mushrooms, and within the space of a couple of hours the township of canvas had sprung into existence. Meanwhile the assistants had been busy, and a very acceptable breakfast was partaken of. During the forenoon most members spent the time in putting their tents in order.

After lunch a large party visited the Blow Hole and the Remarkable Cave, which were situated not far from camp. After leaving the camp a short walk through the scrub brought us to the regular tourist road which leads to the cliffs, and passes, en route, the old Government farm, which, in the time of convict labour, must have been a very large establishment. At the present time only portion of the old build-



Dinner-time in Camp.



Group of Members who attended the Camp.

ings are occupied. The remainder are either on the verge of ruin or have been pulled down as dangerous. After leaving the farm the road leads on to the cave (a short side track leading to the Blow Hole), which is reached by steps cut in the face of the cliffs for a certain distance, while for the final few feet of the descent a wooden ladder is provided. The Remarkable Cave is well worth visiting, and the artists of the party were soon busy both with brush and camera, in order to bring back with them a memento of their visit, in the shape of views of this little known yet wonderful cave. The steps down the face of the cliff lead to a large bowl-shaped opening, and from here the cave opens by two separate passages direct to the ocean, so it will be seen that it is practically a blowhole on a very large scale. At the time of our visit the tide was very low, thus enabling one to walk right through to the ocean beach.

The first evening in camp was a quiet one for all, as after the events of the day and preceding night bed was sought early. But the following morning the camp was astir by 7 o'clock, and a large number of members were to be seen dissipating themselves in the placid waters of the bay, while others preferred a surf-bathe on the outer beach. After breakfast members boarded the *Koomoola* and proceeded to Carnarvon, where a large party was landed, and proceeded to explore the settlement and surrounding district, while a small but very enthusiastic party proceeded outside to the open ocean to see what treasure, in the shape of scientific specimens, could be dredged from the ocean's bed. The steamer went several miles out to sea south of Tasman Island, and was ably handled by the genial skipper, Capt. Holyman, thus enabling numerous hauls to be made. Unfortunately, owing to the sea that was running, the large dredge was lost, together with many fathoms of wire rope, and future operations had to be carried on with the small dredges only. As a separate report is to be issued upon the dredging, there is no need for further mention here.

On Sunday the weather, which up to the present had been perfect, took a change for the worse, but this did not prevent parties being arranged to visit such places that were of interest to them, such as the fern gullies in the hills at the rear of the camp, Point Puer, etc., while in the evening a large camp fire was held on the beach, around which nearly the whole camp congregated.

The *Koomoola* was again called into service on Monday, and the day spent in cruising round the bay and visiting such portions of the shores that seemed worthy of examination, while the dredge

was several times brought into commission to bring to the surface specimens from the depths of the bay. Other excursions were made to Mt. Arthur, Oakwood, and the fern gullies in the near vicinity.

The evenings in camp were usually spent in enjoyable socials, which were held round a large camp fire on the beach. Songs were sung, while several members proved their worth in the way of reciting. On one occasion Mr. C. T. Harrison told the members how he spent last Easter in the icy regions of Antarctica, and another evening Captain Kerr brought down the house by singing several witty sea songs, or rather parodies of the same. These impromptu concerts were very popular during the time we were under canvas, and caused the evenings to pass very pleasantly.

But all good things must come to an end, and soon after breakfast on Tuesday morning a start was made to break up the camp. There were many regrets expressed as the tents were lowered down and folded up, and then carried off to the beach, where a very miscellaneous collection of luggage began to accumulate. However, the boats were soon busily engaged in transporting the camp impedimenta aboard the steamer, and by a quarter to 1 the last load had been taken off, the anchor weighed, and the bows of the good ship *Koomoola* turned in the direction of Hobart. A final flutter of handkerchiefs to the three local residents, who had come to bid us farewell, and then Safety Cove passed from our view; but it is to be hoped not for very long.

The homeward trip proved an enjoy-able voyage, as, with the exception of a slight roll as we rounded Cape Raoul, the motion of the boat was scarcely noticeable.

Taking the trip on the whole, it was a very enjoyable outing. The weather for the first portion of the camp was of the best, but the latter part of the trip was rather unsettled. However, speaking generally of the whole outing, it was most pleasant, and things worked together for the enjoyment of all.

BOTANICAL NOTES.

(By Mr. L. Rodway.)

The flowering plants growing at Safety Cove did not form any marked contrast to those growing in the neighbourhood of Hobart, yet there were some interesting forms that well repaid the botanist. The dagger-fruited *Hakea* (*Hakea pugioniformis*) was present in abundance. Its short, stiff, sharp leaves constantly arrested the attention of those who endeavoured to walk through it. This was

generally dispersed over the heathy country. The Eucalypts were stringy bark, white gum, blue gum, and a broad-leaved peppermint, which in Hooker's work is treated as a distinct species (*Eucalyptus nitida*).

At the foot of Brown Mountain Mr. Harrison gathered two forms of unusual interest, one a stunted variety of blue gum, with short broad leaves and small flowers growing in threes, which resembled the heart-leaved gum rather closely in appearance. But the stalked leaves and its fruit could only place it with *Eucalyptus globulus* or cause it to be marked as a new species. In South-Eastern Victoria the common form of *Eucalyptus globulus* approximates to this, yet, till further information should alter our judgment, we may well term this form variety *Harrisoni*, and as such I hope to record it in the transactions of the Royal Society. The other gum was a peppermint, and appeared identical with the small fruiting *Eucalyptus coriifera* common on the Western Tiers.

A large white-flowered everlasting (*Helichrysum bracteatum*, var. *albidum*) was abundant. It forms an excellent garden plant, and seed was gathered for that purpose. Carnivorous plants were much in evidence; they belonged to two families, the butterworts and the sundews. Of the former, the very pretty butterfly plant (*Utricularia dichotoma*) was in full flower, while the smaller species (*U. lateriflora*) was everywhere in the boggy land. Of the sundews there were the forked sundew (*Drosera binata*), the bright red spatulate sundew (*D. spatulata*), and the pretty little dwarf sundew (*D. pygmaea*), whose whole structure, flower and all, could have been hidden by a sixpenny piece.

The autumn *Eriochilus* and the Duck were the only orchids in flower. The little wiry parasite, *Cassytha glabella*, was everywhere, preying with charming indifference on whatever plants it found near. Eyebright (*Euphrasia Brownii*) was one of the few plants in flower. Pretty berries were not numerous, but towards the summit of Mount Arthur there was a gorgeous display of coffee berry (*Coprosma hirtella*), of all shades, from pale scarlet to black. This plant is often also called native holly, which is a pity, for it is neither like nor any relation to a holly, whereas, on the other hand, it is closely related to the true coffee plant. The two seeds in the fruit are formed like miniature coffee beans, and, if some enterprising naturalist will only gather sufficient of them, roast, grind, make coffee, and drink it, it will be of some interest to record the result.

Port Arthur as a whole, especially the fern gullies, would afford interesting hunting for the lower forms of plant life, but the available time at the camp was all too short, and little was done towards collecting these groups.

DREDGING RESULTS.

(By Mr. C. T. Harrison.)

Amongst those interested, the dredging during the Easter trip of the Field Naturalists' Club is always looked forward to with the keenest interest, for it is from the little-worked fields of ocean around our coast that we expect each year to get our rarest and most interesting specimens—to yield us something new. Above, in the sunlight, the little steamer will be riding buoyantly over waves that sweep foam-topped under the fresh north-easterly breeze, the sea birds sailing around, and all is light and motion. Below, the dredge is groping blindly in the dim twilight of the still depths, in the oozy debris of broken polyzoa and old sea shells, scraping a little here, a few feet of the sea floor there, yet each short drag adding to our knowledge of the abundant life of the Great Deep. And the means of the Tasmanian Field Naturalists enables them to deal only with the very fringe of this submarine world; but even in such comparatively shallow depths, less than 100 fathoms, a few short drags yields so many species of its different forms of life, hitherto unknown, or unrecorded from Tasmanian waters, that we realise something of the work still to be done, of the multitudinous life abounding, the number and variety of the unknown forms that must be still hidden there; and of the interesting questions of range and distribution. And fascinating work it is, prying into, investigating, classifying, the wonderful, the beautiful, or the often grotesque inhabitants of the deeper seas.

Although the dredging this year was somewhat disappointing, yet the small amount of stuff snatched with difficulty from a depth of about 450 feet, is yielding, as usual, new and unrecorded species in the different pylons presented—speaking to us of what might be done if means only allowed of less haphazard, more systematic work being carried out.

On March 22, after taking a large party from Safety Cove to the port, the *Kooameela* steamed out of Port Arthur, south, with the dredging party on board. The first trial was made about two miles from the entrance, in about 50 fathoms, but the dredge came up empty after both drags. The *Kooameela* then steamed out

until the bearings of Tasman Island and Cape Raoul showed the vessel was seven miles off shore; the depth then about 70 fathoms. The work here was carried out under difficulty, with a strong breeze from the north-east, and considerable sea running. The steamer was rolling gunwale in, water occasionally over the deck, and the heavy derrick, from which the dredge was worked, swinging violently with the rolling of the vessel. Only a small amount of stuff was brought up in the few drags, and, probably with a heavy load in, the line parted in a heavy roll, and the large dredge from the University, with over 80 fathoms of rope, was lost.

On March 24, in taking parties to the Port and to Oakwood, three drags were tried—one near the Settlement, one nearer the Isle of the Bead, and the third in a deep hole beyond the isle. Thick brown mud was brought up each time, with a few interesting varieties of shells, crustacean, cake urchins, etc.

Amongst the molluscs from the fragmentary polyzoic sand and old shells brought up from 70 fathoms, Mr. May has shown me the hollow horn-like *Dentalium virgula*, with small embryonic shells, from which they apparently grow, still showing at the smaller end. Unrecorded from Tasmania. Two or three pair of *Cadita rosulenta*, a fine species of cockle; to the uninitiated very like *Trigonia* in appearance; large massive shells. A *Cuspidaria*, a white cockle shell, about half an inch across, the length doubled by the one end of the valves, narrowing out in a hollow tube. Mr. May pointed out that this agrees closely with a species dredged by the Challenger in 1,000 fathoms off the Azores. As it is scarcely likely to be the same, it is probably a new species. A triangular-shaped shell of about the same size could not be placed at all. Unfortunately, only an old worn valve, and a fragment of a larger one found, so is practically useless. Already a considerable number of smaller shells, members of the large family of *Marginellas*, etc., have been picked out, and more new or rare varieties may be found amongst these smaller species.

Almost every crab from the 70 fathoms is either new, or not taken on our previous trips. A handsome white crab, bristling with points or tubercles, was a welcomed prize, for a badly-damaged specimen was taken at about the same depth off Schouten Island, Easter, 1910, and pronounced "new" at the Australian Museum, Sydney. A fine pair of the family *Maillidae*, or "spider crabs," bearing long stout points on their carapace, resembles one taken on the same occasion, and supposed to be a new

species of "*Pugettia*," but as that crab is now in Sydney awaiting description and name they cannot be compared. But a still more "spider-like" crab is a fine *Homolidae*, apparently of the genus *Latreillia*, with a pointed triangular body of about half an inch long, and spindle legs of four times that length. The long thin eye-stalks, carrying large eyes, are half as long as the body. Have never taken any of this family before. Another crab not dredged before—rough, odd-shaped, with a couple of feeble legs turned up on to the back, as if to carry a mantle or protective covering, as do the *Diomidae*. From the mud in Port Arthur a couple of *Callinassidae* tiny lobster-like creatures, with almost transparent covering, and one largely developed front claw.

In Professor T. Thompson Flynn's specimen jars all the lower forms of life found a resting place. And although, from the small amount of stuff brought up, the "take" is more limited than usual, still there are curious and interesting creatures amongst it. Tubicolous worms in slightly curving, horny, quill-like cases, four inches in length; some specimens of the beautiful fan-shaped "cup-coral" (*Elabellum*), only found in the deeper water. Varieties of the starfish family; handsome *Asteroids*, very different from the species usually found in shallow water; the largest a fine five-rayed star nearly six inches across; *Ophiuroids*, with long withering arms; *Ascidians*, sponges, etc.

These curious and complicated forms are not so readily dealt with as the higher animals, molluscs, crustacea, etc., and have yet to be sorted and classified; so the Professor can say very little about them yet. But it is almost certain that some of them will prove new species.

GEOLOGICAL NOTES ON POINT ARTHUR DISTRICT.

(By A. N. Lewis.)

Safety Cove, Port Arthur, is not one of our many places of great geological interest, but the results of the camp in this line were by no means unsatisfactory, because, although nothing absolutely new was discovered, at least one very interesting formation, described fully below, was found.

The oldest rocks in the vicinity of the camp were the cliffs at Point Puer. They are composed of almost perfectly horizontal layers of permio-carboniferous lime-



Incidents connected with the Annual Outing of the Club at Safety Cove.



A Boating Party at Safety Cove.

stones and mudstones, interstratified with layers of slatey-coloured marine mudstones. The beds stretch inland for some distance, probably underlying the sandstones of the hills behind. They are also continued past Carnarvon for some distance. The following is a rough estimate of the various layers at the highest part of the cliffs:—Barren, yellowish mudstones about 20ft., mud-limestones and pure limestones containing all typical fossils of this horizon about 10ft., greyish barren mudstones about 20ft., limestones about 10ft., another layer of the greyish mudstones 4ft., basal mudstones of unknown depth. These beds have a slight tilt to the northward, and to Dead Island and the surrounding shore-line, as well as those beds to the north of Carnarvon are all of the upper layer, while the end of the cliffs near Safety Cove are of the bottom layers, all the rest having been worn away. The fossils to be found in the mudstones are the usual ones found in this system. There are some very good specimens of the productus to be found, and there is a marked absence of all larger shells, such as the *Spirifera convoluta*, the *Aviculopectens*, and the *Eurydesmas*.

The hills at the back of Safety Cove and around the caves are composed of yellow or red mesozoic sandstones, entirely barren of fossils. There are some sandstones of the same period at the head of Long Bay, in which traces of *Phyllothea* and *Zeugophyllites* were observed. These evidently merge into the coal measures further north.

The whole of the mountains on the eastern side of Port Arthur are formed of diabase. They have been formed with Cape Pillar and Cape Raoul as a sill of diabase, which has welled up further to the north, filled some fissure in the overlying strata, but never reached the surface, and forced its way between the layers of older strata which overlay it for thousands of feet above the present summits of the mountains. The flatness of Cape Raoul and Tasman Island is caused by the moulding of the molten diabase by the overlying strata. The softer rock which was above them once has been worn away, but the hard, igneous rock has resisted erosion and preserved the original flat, sill-like structure it assumed in forming. The columnar structure has been formed at the edge of the sill, where the diabase stopped either through impediment or

through coming out of the edge of the sandstone. A few patches of this older sandstone are to be seen, one near Capo Pillar and others towards the western end of the sill near Wedge Bay, Cape Raoul, Cape Pillar, Arthur's Peak, Brown Mountain the top of Mount Arthur are formed in this way, and are diabase, not basalt, as they are sometimes called.

Now, when this diabase was forced through the sandstone strata at a temperature of about 3,000deg. Fahr., it produced remarkable changes on the sandstones with which it came in contact, and this metamorphic rock was by far the most interesting formation found.

The place where it is best seen is between the Blowhole and the Caves, where the diabase of Brown Mountain meets the sandstones. In one place the following structure can be clearly seen. There is a small cliff of sandstones, with conglomerates on the top, underneath which can be seen the first effects of the enormous heating from below. For a foot or so the change is hardly noticeable, and is confined to a hardening of the rock, but after that it changes with increasing rapidity. Soon the rock becomes a dull brown, and very much harder, and large specks of mica appear. Very soon the rock is so hard as to be unaffected by a hammer blow, but still preserves its stratified form. Up through cracks has welled thin sheets of diabase as miniature dykes, telling of the sill not far below. Great masses of entirely changed matter are seen mixed up with the other rock, which soon loses all resemblance to any stratified rock, and becomes purely a mass of quartzite. The whole rock has now been changed in colour. Some of it is a pale green, some blue, other parts are a shining black; some again are like polished marble, and all of it is much harder than the ordinary diabase, which comes just below it.

This is continued with great variety all along the southern coast between Brown Mountain and Cape Raoul, and is a sight worth the trip to see.

The absence of native shell mounds along the whole shores of Port Arthur is particularly noticeable. The reason is probably that there are few shell beds near containing the shellfish eaten by the natives. There is one large bed at Long Bay, and a few flints were found at other places.

